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| 試験報告書番号: Test Report No. | LCS210628105AS | 頁: Page | 1 of 16 |
| 申請者: Applicant: | TOKIO LAB CO.,LTD 3-61-7 BUBAI-CHO,FUCHU-SHI,TOKYO, JAPAN | | |
| 製造者: Manufacturer: | Shantou Jinlongjie Electronics CO.LTD Shatianpian Industrial Park West, Chenghua Industrial District, Chenghai District, Shantou City | | |
| 試験品: Test item: | Li-ion Cell | | |
| 識別表示: Identification: | 14500 | 製造番号: Serial No.: | Engineering sample |
| 申請受理番号: Receipt No.: | 210628105A | 申請受理日: Date of receipt: | 2021-06-28 |
| 試験場所: Testing location: | Shenzhen LCS Compliance Testing Laboratory Ltd. Room 101, 201, Building A and Room 301, Building C, Juji Industrial Park, Yabianxueziwei, Shajing Street, Bao'an District, Shenzhen, Guangdong, China | | |
| 適用した試験基準: Test specification: | 電気用品の技術上の基準を定める省令の解釈(R01.12.25) 別表第九リチウムイオン蓄電池 Interpretation for METI Ordinance of Technical Requirements (R01.12.25) Appendix 9 : Lithium ion secondary batteries (Cell part—test only as client's request) | | |
| 試験所: Testing Laboratory: | Shenzhen LCS Compliance Testing Laboratory Ltd. Room 101, 201, Building A and Room 301, Building C, Juji Industrial Park, Yabianxueziwei, Shajing Street, Bao'an District, Shenzhen, Guangdong, China | | |
| 試験結果: Test result: | 上記試験品は、適合した。 The a. m. test item passed. | | |
| 備考/Other Aspects: 電気用品安全法 – 特定電気用品以外の電気用品 –リチウムイオン蓄電池 Electrical Appliance and Material Safety Law – Other electrical appliances and materials – Li-Ion secondary batteries | 試験者: Tested by: | 2021-07-29 | Smart Shi <i>Smart Shi</i> |
| 検査者: Checked by: | 承認者: Approved by: | 2021-07-29 | Hart Qiu <i>Hart Qiu</i> |
| 日付 Date | 氏名 Name | 署名 Signature | 日付 Date |
| 2021-07-29 | Lilia Zhang | <i>Lilia Zhang</i> | 2021-07-29 |
| 略語: OK, Pass or P = 適合 F or Fail = 不適合 N/A or N = 該当せず | Abbreviations: | OK, Pass or P = passed F or Fail = failed N/A or N = not applicable | |
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| | |
|--|---|
| Test item description | Li-ion Cell |
| Model/Type reference..... | 14500 |
| Manufacturer | Shantou Jinlongjie Electronics CO.LTD Shatianpian Industrial Park West, Chenghua Industrial District, Chenghai District, Shantou City |
| Factory..... | Shantou Jinlongjie Electronics CO.LTD Shatianpian Industrial Park West, Chenghua Industrial District, Chenghai District, Shantou City |
| Seller Name of Trade mark | N/A |
| Ratings..... | 500mAh, 3.7V, 1.85Wh |
| Possible test case verdicts: | |
| - test case does not apply to the test object : N/A | |
| - test object does meet the requirement : P (Pass) | |
| - test object does not meet the requirement : F (Fail) | |
| Testing: | |
| Date of receipt of test item | : 2021-06-28 |
| Date (s) of performance of tests | : 2021-06-28 to 2021-07-28 |
| General remarks: | |
| The test results presented in this report relate only to the object tested. This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory. The completed test report includes the Attachment 1: Equipment list (2 pages) and Attachment 2: Photo documents (1 page) . | |
| The completed test report includes the Throughout this report a point is used as the decimal separator | |

Copy of marking plate:

| | |
|---------------------------------------|---|
| + | - |
| Li-ion Cell | |
| Model: 14500 | |
| 500mAh, 3.7V, 1.85Wh | |
| INR14/50 YYYYMMDD | |
| Shantou Jinlongjie Electronics CO.LTD | |

Remark:

“YYYY” means year for manufacture;

“MM” means month for manufacture;

“DD” means day for manufacture.

General product information:

The cell consists of the positive electrode plate, negative electrode plate, separator, electrolyte and case. The positive and negative electrode plates are housed in the case in the state being separated by the separator.

Dimension: 14.0mm x 50.0mm

Weight: approx. 17.3g

The main features of this model are shown as below:

| Model | Nominal capacity | Nominal voltage | Nominal Charge Current | Nominal Discharge Current | Maximum Charge Current | Maximum Discharge Current | Maximum Charge Voltage | Cut-off Voltage |
|-------|------------------|-----------------|------------------------|---------------------------|------------------------|---------------------------|------------------------|-----------------|
| 14500 | 500mAh | 3.7V | 250mA | 250mA | 1000mA | 1500mA | 4.25V | 2.75V |

Construction:

Cell

Circuit diagram:

None, cell only.

Summary of Testing:

The cell is evaluated and tested in this test report according to DENAN appendix 9.

Testing location:**Shenzhen LCS Compliance Testing Laboratory Ltd.**

Room 101, 201, Building A and Room 301, Building C, Juji Industrial Park, Yabianxueziwei, Shajing Street, Bao'an District, Shenzhen, Guangdong, China

Test item:

- 2.(1) Continuous Low Rate Charge;
- 2.(2) Vibration;
- 2.(4) Temperature cycling;
- 3.(1) External short circuit;
- 3.(2) Free fall;
- 3.(3) Mechanical shock (crash hazard);
- 3.(4) Thermal abuse;
- 3.(5) Crushing of cells;
- 3.(6) Low pressure;
- 3.(7) Overcharge;
- 3.(8) Forced discharge;
- 3.(9) Cell protection against a high charging rate;
- 3.(10) Forced internal short circuit of cells.

| Clause | Requirement - Test | Result - Remark | Verdict |
|--------------|---|---|---------|
| 1. | Basic Design | | P |
| 1.(1) | Insulation and Wiring | | P |
| | a) Insulation Resistance between an accessible metal case (excluding electrical contacts) and positive terminals $\geq 5M\Omega$. | | N/A |
| | b) Internal wiring and insulation are sufficient to withstand maximum anticipated current, voltage and temperature requirements | | P |
| | c) Orientation of wiring maintains adequate creepage and clearance distances between conductors. Mechanical integrity of internal connections are sufficient to accommodate conditions of reasonably foreseeable misuse. | | P |
| 1.(2) | Inner Pressure Reduction Mechanism | | P |
| | a) Battery cases and cells incorporate a pressure relief mechanism or are constructed so that they relieve excessive internal pressure at a value and rate that will preclude rupture, explosion and self-ignition. | Venting mechanism exists on the top of the cell. | P |
| | b) Encapsulation used to support cells within an outer casing does not cause the battery to overheat during normal operation no inhibit pressure relief. | | N/A |
| 1.(3) | Temperature and current management | Cell only | N/A |
| | The batteries are designed such that abnormal temperature rise conditions are prevented. | | N/A |
| | Means is provided to limit current to safe levels during charge and discharge. | | N/A |
| 1.(4) | Terminal contacts | | P |
| | a) Terminals have a clear polarity marking on the external surface of the battery or be designed with no fear of misconnection. | The terminals are special Electrode tab. | P |
| | b) The size and shape of the terminal contacts ensure that they can carry the maximum anticipated current. | The Electrode tab terminal contacts complied with the requirements. | P |
| | c) External terminal contact surfaces are formed from conductive materials with good mechanical strength and corrosion resistance. | The Electrode tab terminal contacts complied with the requirements. | P |
| | Terminal contacts are arranged to minimize the risk of short circuits. | Complied. | P |
| 1.(5) | Assembly of cells into batteries | Cell only | N/A |
| | Batteries made of series connected cell blocks shall be designed so that cells are assembled to make the cell blocks the same capacity, and cell polarity reversal is prevented. Provided that this does not apply to the battery controlled by itself or the equipment as cell polarity reversal is prevented. | | N/A |

| Clause | Requirement - Test | Result - Remark | Verdict |
|--------------|---|------------------------------------|---------|
| 2. | Intended Use | | P |
| 2.(1) | Continuous Low Rate Charge | | P |
| | Fully charged cells are subjected for 28 days to a charge as specified by the manufacturer. | Arrange the test as required. | P |
| | Ambient temperature when testing | 45°C | P |
| | Results: no fire, no explosion, no leakage | No fire, no explosion, no leakage. | P |
| 2.(2) | Vibration | | P |
| | The measured open circuit voltage of the fully charged cells or batteries is within anticipated parameters | See test below. | P |
| | The cells or batteries are subjected to a vibration sequence with amplitude of 0.76 mm and a total maximum excursion of 1.52 mm. The frequency was varied at the rate of 1 Hz/min between the limits of 10 Hz and 55 Hz. The entire range of frequencies (10 Hz to 55 Hz) and return (55 Hz to 10 Hz) was traversed in 90 min ± 5 min for each mounting position. | | P |
| | The vibration was applied in each of three mutually perpendicular directions. | Arrange the test as required. | P |
| | Results: no fire, no explosion, no leakage | No fire, no explosion, no leakage. | P |
| 2.(3) | Battery enclosure test at high ambient temperature | Cell only | N/A |
| | Fully charged batteries were placed in an air-circulating oven at a temperature of 70°C ± 2°C for 7 hours. Afterwards, they are removed and allowed to return to room temperature. | | N/A |
| | Results: no physical distortion of the battery casing resulting in exposure of internal components. | | N/A |
| 2.(4) | Temperature cycling | | P |
| | Fully charged cells or batteries were subjected to temperature cycling (+75°C, +20°C, -20°C, +20°C) in forced draught chambers according to the procedure. | Arrange the test as required. | P |
| | After the fifth cycle, the cells or batteries were stored at 20 ± 5°C for 7 days prior to examination. | Arrange the test as required. | P |
| | Results: No fire, no explosion, no leakage | No fire, no explosion, no leakage. | P |
| 3 | Reasonably foreseeable misuse | | P |
| 3.(1) | External short circuit | Tested applied | P |

| Clause | Requirement - Test | Result - Remark | Verdict |
|--------------|--|--|---------|
| | a) Fully charged cells were subjected to a short circuit test at $55^{\circ}\text{C} \pm 5^{\circ}\text{C}$. | Arrange the test as required. Each 5pcs cells charged at ambient temperature 45°C and -5°C respectively prepared for the test. | P |
| | The external resistance did not exceed $80 \pm 20 \text{ m}\Omega$. | See table 3.(1) | P |
| | The cells were tested for 24 h or until the case temperature declined by 20% of the maximum temperature rise. | Tested until the case temperature declined by 20% of the maximum temperature rise. | P |
| | b) Fully charged batteries were subjected to a short circuit test at $20^{\circ}\text{C} \pm 5^{\circ}\text{C}$. | Cell only | N/A |
| | The external resistance did not exceed $80 \pm 20 \text{ m}\Omega$. | | N/A |
| | The batteries were tested for 24 h or until the case temperature declined by 20% of the maximum temperature rise. | | N/A |
| | If battery incorporates protective device or protective circuit and the current has stopped, then for one hour after the current stopped. | | N/A |
| | Results: no fire, no explosion. | No fire, no explosion. | P |
| 3.(2) | Free fall | Arrange the test as required. | P |
| | Fully charged cells or batteries were dropped 3 times from a height of 1.0 m onto a concrete floor. | | P |
| | Provided that this does not apply to charged batteries weighting more than 7 kg. | | P |
| | Results: no fire, no explosion | No fire, no explosion. | P |
| 3.(3) | Mechanical shock (crash hazard) | | P |
| | a) Fully charged cells or batteries were subjected to a total of three shocks of equal magnitude applied in each of three mutually perpendicular directions. | Arrange the test as required. | P |
| | b) During the initial 3 milliseconds, the minimum average acceleration was 735 m/s^2 . The peak acceleration was between 1228 m/s^2 and 1716 m/s^2 . | | P |
| | Results: no fire, no explosion, no leakage | No explosion, no leakage. | P |
| 3.(4) | Thermal abuse | | P |
| | Fully charged cells were placed in a gravity or circulating air-convection oven. The oven temperature was raised at a rate of $5^{\circ}\text{C}/\text{min} \pm 2^{\circ}\text{C}/\text{min}$ to a temperature of $130^{\circ}\text{C} \pm 2^{\circ}\text{C}$. The cell remained at that temperature for 10 minutes before the test was discontinued. | Arrange the test as required. Each 5pcs cells charged at ambient temperature 45°C and -5°C respectively prepared for the test. | P |
| | Results: no fire, no explosion | No fire, no explosion. | P |
| 3.(5) | Crushing of cells | Tested applied | P |

| Clause | Requirement - Test | Result - Remark | Verdict |
|--------------|---|---|---------|
| | a) Fully charged cells were crushed between two flat surfaces with a hydraulic ram exerting a force of 13 kN \pm 1 kN. | Arrange the test as required. Each 5pcs cells charged at ambient temperature 45°C and -5°C respectively prepared for the test. | P |
| | b) The force was released when | | P |
| | (1) the maximum forces applied | The Maximum force is achieved when the force applied crushing the cell | P |
| | (2) an abrupt voltage drop of one-third of the original voltage has been obtained | | N/A |
| | (3) There was 10% deformation of battery height | | N/A |
| | c) A cylindrical or prismatic cell was crushed with its longitudinal axis parallel to the flat surfaces of the crushing apparatus. | Cylindrical cell. | P |
| | A second set of prismatic cells was tested, rotated 90 degrees around their longitudinal axis compared to the first set. | | N/A |
| | Ambient temperature when testing | Ambient temperature 45°C and -5°C respectively. | P |
| | Results: no fire, no explosion. | No fire, no explosion. | P |
| 3.(6) | Low pressure | Arrange the test as required. | P |
| | Fully charged cells are placed in a vacuum chamber whose internal pressure was gradually reduced to a pressure equal to or less than 11.6 kPa and held at that value for 6 hours. | | P |
| | Results: no fire, no explosion, no leakage | No fire, no explosion, no leakage. | P |
| 3.(7) | Overcharge | Tested applied | P |
| | A discharged cell was charged from a power supply of ≥ 10 V, at a charging current I_{rec} recommended by the manufacturer for $2.5 C_5/I_{rec}$ hours or until it reach the test voltage. | Arrange the test as required. Each 5pcs cells overcharged at ambient temperature 45°C and -5°C respectively during the test. | P |
| | Ambient temperature when testing | Ambient temperature 45°C and -5°C respectively. | P |
| | Results: no fire, no explosion. | No fire, no explosion. | P |
| 3.(8) | Forced discharge | | P |
| | Discharged cells intended for use in multi-cell applications, were subjected to a reverse charge at $1.0 I_t$ (A) for 90 minutes. | Arrange the test as required. Each 5pcs cells Forced discharge at ambient temperature 45°C and -5°C respectively during the test. | P |
| | Ambient temperature when testing | Ambient temperature 45°C and -5°C respectively. | P |

| Clause | Requirement - Test | Result - Remark | Verdict |
|---------------|--|--|---------|
| | Results: no fire, no explosion | No fire, no explosion. | P |
| 3.(9) | Cell protection against a high charging rate | | P |
| | Discharged cells were charged at three times the charging current recommended by the manufacturer until | Arrange the test as required. Each 5pcs cells high charged at ambient temperature 45°C and -5°C respectively during the test. | P |
| | the cells was fully charged, or | | P |
| | A protective devices in the equipment or battery cut off the charge current before the cell became fully charged. | No protective device exists on the cell. | N/A |
| | Ambient temperature when testing | Ambient temperature 45°C and -5°C respectively. | P |
| | Results: no fire, no explosion | No fire, no explosion. | P |
| 3.(10) | Forced internal short circuit of cells | Tested applied | P |
| | Pressed the winding core of charged cell (except when electrolyte is not liquid) by pressing jig under condition that nickel peace was inserted. | Arrange the test as required. Each 5pcs cells charged at ambient temperature 45°C and -5°C respectively prepared for the test. | P |
| | Inserted between the positive active material and negative active material | | P |
| | Inserted between the uncoated current collector of positive electrode and the active material coated negative active electrode | | P |
| | Test was stopped when voltage drop of over 50 mV was obtained, or | | N/A |
| | Stopped when the pressure reached 800 N (for prismatic cells, 400N). | The force reached 800N. | P |
| | Ambient temperature when testing | Ambient temperature 45°C and -5°C respectively. | P |
| | Number of test sample | Each 5pcs cells pressed at ambient temperature 45°C and -5°C respectively prepared for the test. | P |
| | Results: no fire, no explosion | No fire, no explosion. | P |
| 3.(11) | Function of the overvoltage protection of batteries | Cell only | N/A |
| | The cell block in the battery shall not exceed the upper limited charging voltage at 20 ± 5°C ambient temperature. | | N/A |
| | a) For batteries made of a one cell block, the voltage applied to the cell block during charging shall be measured. | | N/A |

| Clause | Requirement - Test | Result - Remark | Verdict |
|---------------|--|--|---------|
| | b) For batteries consisting of a series of two pieces or more of cell blocks, it shall be charged while measuring the voltage of each cell block and at the same time, one cell block shall forcibly be discharged and the voltages of the other cell blocks shall gradually be measured. | | N/A |
| | c) For batteries consisting of a series of connection of two pieces or more of cell blocks, a voltage exceeding the upper limited charging voltage specified in Annex Table 1-2 shall be applied to the cell block while measuring the voltage of each cell block. When the charging stops, the voltage shall be measured. | | N/A |
| | The battery provides with protective circuits | | N/A |
| | Appliance in which battery is installed or battery charger provides with protective circuits. | | N/A |
| 3.(12) | Free fall of appliance | Cell only | N/A |
| | The charged battery shall be installed to be used, and shall be dropped once a concrete floor or iron plate in a direction considered to most likely affect the battery in a negative manner. | | N/A |
| | An equivalent load shall be applied to the battery | | N/A |
| | Kind of equipment | | N/A |
| | Weight of appliance | | N/A |
| | Applicable standard | | N/A |
| | Height in drop testing | | N/A |
| | Results: no short-circuiting | | N/A |
| 4 | Labeling | | P |
| | Labeling for cells shall be provided as below on surface where it can easily be seen but not easily faded. | The label of cells meets the requirements. | P |
| | Rated voltage | See page 3 | P |
| | Rated capacity | See page 3 | P |

| TABLE 1: List of Critical Components | | | | | P |
|---|---------------------------------------|------------|--|------------------|-------------------------------------|
| Object/part No. | Manufacturer/ trademark | Type/Model | Technical Data | Standard | Mark(s) of conformity ¹⁾ |
| Cell | Shantou Jinlongjie Electronics CO.LTD | 14500 | 500mAh, 3.7V | DENAN Appendix 9 | Tested with appliance |
| -Positive Electrode | -- | -- | Li(Ni _{0.3} Co _{0.2} Mn _{0.5})O ₂ | -- | -- |
| -Negative Electrode | -- | -- | Carbon | -- | -- |
| -Electrolyte | -- | -- | LiPF ₆ +EC+DMC+EMC | -- | -- |
| -Separator | -- | -- | 16µm, Shutdown temperature: 130°C | -- | -- |
| Supplementary information: | | | | | |

| TABLE: 2.(1) Continuous Low Rate Charge Test (Cell) | | | | | P |
|---|---|--------------------------------------|---------------------------------------|---------------------------|---------|
| Model | Recommended Charging Method, CC, CV, or CC/CV | Recommended Charging Voltage Vc, Vdc | Recommended Charging Current Irec, mA | OCV at Start of Test, Vdc | Results |
| #1 | CC and CV | 4.25 | 1000 | 4.18 | P |
| #2 | CC and CV | 4.25 | 1000 | 4.18 | P |
| #3 | CC and CV | 4.25 | 1000 | 4.18 | P |
| #4 | CC and CV | 4.25 | 1000 | 4.18 | P |
| #5 | CC and CV | 4.25 | 1000 | 4.18 | P |
| Supplementary information: no fire, explosion or leakage observed | | | | | |

| TABLE: 2.(2) – Vibration Test (Cell) | | | P |
|---|---------------------------|---------|---|
| Model | OCV at Start of Test, Vdc | Results | |
| #1 | 4.17 | P | |
| #2 | 4.17 | P | |
| #3 | 4.18 | P | |
| #4 | 4.17 | P | |
| #5 | 4.17 | P | |
| Supplementary information: no fire, explosion or leakage observed | | | |

| TABLE: 2.(2) – Vibration Test (Battery Pack) | | | N/A |
|---|---------------------------|---------|-----|
| Model | OCV at Start of Test, Vdc | Results | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| Supplementary information: no fire, explosion or leakage observed | | | |

| TABLE: 3.(1) – External Short Circuit Test (Cell) | | | | | P |
|---|-------------------------|---------------------------|---------------------------|--------------------------------------|---------|
| Model | Ambient (At 55°C ± 5°C) | OCV at start of test, Vdc | Resistance of Circuit, mΩ | Maximum Case Temperature Rise ΔT, °C | Results |
| Samples charged at charging temperature upper limit (45°C) | | | | | |
| #1 | 55.4 | 4.22 | 88 | 77.6 | P |
| #2 | 55.4 | 4.21 | 85 | 79.2 | P |
| #3 | 55.4 | 4.21 | 84 | 77.5 | P |
| #4 | 55.4 | 4.21 | 81 | 74.8 | P |
| #5 | 55.4 | 4.21 | 82 | 75.9 | P |
| Samples charged at charging temperature lower limit (-5°C) | | | | | |
| #6 | 55.5 | 4.10 | 86 | 80.4 | P |
| #7 | 55.5 | 4.12 | 80 | 71.5 | P |
| #8 | 55.5 | 4.12 | 82 | 75.2 | P |
| #9 | 55.5 | 4.12 | 85 | 75.4 | P |
| #10 | 55.5 | 4.11 | 87 | 74.7 | P |
| Supplementary information: no fire or explosion | | | | | |

| TABLE: 3.(1) – External Short Circuit Test (Battery Pack) | | | | | N/A |
|--|-------------------------|---------------------------|---------------------------|--------------------------------------|---------|
| Model | Ambient (At 20°C ± 5°C) | OCV at start of test, Vdc | Resistance of Circuit, mΩ | Maximum Case Temperature Rise ΔT, °C | Results |
| Samples charged at charging temperature upper limit (°C) | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
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| | | | | | |
| Samples charged at charging temperature lower limit (°C) | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| Supplementary information: no fire or explosion | | | | | |

| TABLE: 3.(7) – Overcharge Tests (Lithium Systems) | | | | | | P |
|--|---------------------------------------|---------------------------|---------------------|-------------------------------|---------------------------|---------|
| Model | Ambient (At -5°C ± 2°C or 45°C ± 2°C) | OCV at start of test, Vdc | Charging Current, A | Maximum Charging Voltage, Vdc | Total Time of Charging, h | Results |
| #1 | -5 | 3.24 | 0.25 | 10 | 5 | P |
| #2 | -5 | 3.22 | 0.25 | 10 | 5 | P |
| #3 | -5 | 3.25 | 0.25 | 10 | 5 | P |
| #4 | -5 | 3.35 | 0.25 | 10 | 5 | P |
| #5 | -5 | 3.27 | 0.25 | 10 | 5 | P |
| #6 | 45 | 3.27 | 0.25 | 10 | 5 | P |
| #7 | 45 | 3.25 | 0.25 | 10 | 5 | P |
| #8 | 45 | 3.25 | 0.25 | 10 | 5 | P |
| #9 | 45 | 3.28 | 0.25 | 10 | 5 | P |
| #10 | 45 | 3.28 | 0.25 | 10 | 5 | P |
| Supplementary information: No fire or explosion. | | | | | | |

| TABLE: 3.(8) – Forced Discharge Test (Cell) | | | | | P |
|--|---------------------------------------|---|-------------------------------|---|---------|
| Model | Ambient (At -5°C ± 2°C or 45°C ± 2°C) | OCV before application of reverse charge, Vdc | Measured Reverse Charge It, A | Total Time for Reversed Charge Application, Min | Results |
| #1 | -5 | 3.27 | 0.5 | 90 | P |
| #2 | -5 | 3.24 | 0.5 | 90 | P |
| #3 | -5 | 3.28 | 0.5 | 90 | P |
| #4 | -5 | 3.28 | 0.5 | 90 | P |
| #5 | -5 | 3.22 | 0.5 | 90 | P |
| #6 | 45 | 3.29 | 0.5 | 90 | P |
| #7 | 45 | 3.29 | 0.5 | 90 | P |
| #8 | 45 | 3.29 | 0.5 | 90 | P |
| #9 | 45 | 3.29 | 0.5 | 90 | P |
| #10 | 45 | 3.25 | 0.5 | 90 | P |
| Supplementary information: no fire or explosion | | | | | |

| TABLE: 3.(9) – Cell Protection Against a High Charging Rate Test (Lithium Systems) | | | | | P |
|---|--|---------------------------|-----------------------------|-------------------------------|---------|
| Model | Ambient (At $-5^{\circ}\text{C} \pm 2^{\circ}\text{C}$ or $45^{\circ}\text{C} \pm 2^{\circ}\text{C}$) | OCV at start of test, Vdc | Maximum Charging Current, A | Maximum Charging Voltage, Vdc | Results |
| #1 | -5 | 3.24 | 3 | 4.25 | P |
| #2 | -5 | 3.25 | 3 | 4.25 | P |
| #3 | -5 | 3.25 | 3 | 4.25 | P |
| #4 | -5 | 3.24 | 3 | 4.25 | P |
| #5 | -5 | 3.25 | 3 | 4.25 | P |
| #6 | 45 | 3.28 | 3 | 4.25 | P |
| #7 | 45 | 3.28 | 3 | 4.25 | P |
| #8 | 45 | 3.25 | 3 | 4.25 | P |
| #9 | 45 | 3.24 | 3 | 4.25 | P |
| #10 | 45 | 3.27 | 3 | 4.25 | P |
| Supplementary information: no fire or explosion | | | | | |

| TABLE: 3.(10) – Forced internal short circuit of cells | | | | | P |
|---|--|---------------------------|-------------------------------|--------------------|---------|
| Model | Ambient (At $-5^{\circ}\text{C} \pm 2^{\circ}\text{C}$ or $45^{\circ}\text{C} \pm 2^{\circ}\text{C}$) | OCV at start of test, Vdc | Maximum applied pressure, (N) | Voltage drop, (mV) | Results |
| #1 | -5 | 4.12 | 800 | 0 | P |
| #2 | -5 | 4.12 | 800 | 1 | P |
| #3 | -5 | 4.10 | 800 | 0 | P |
| #4 | -5 | 4.11 | 800 | 0 | P |
| #5 | -5 | 4.10 | 800 | 0 | P |
| #6 | 45 | 4.22 | 800 | 0 | P |
| #7 | 45 | 4.21 | 800 | 0 | P |
| #8 | 45 | 4.21 | 800 | 0 | P |
| #9 | 45 | 4.22 | 800 | 0 | P |
| #10 | 45 | 4.21 | 800 | 0 | P |
| Supplementary information: no fire or explosion | | | | | |

| TABLE: 3.(11) –Function of the overcharge protection of batteries | | | | N/A |
|--|---------------------------|-------------------------|-----------------------|---------|
| Model | OCV at start of test, Vdc | OCV at ens of test, Vdc | Charging Voltage, Vdc | Results |
| | | | | |
| Supplementary information: no fire or explosion | | | | |

-- End of Report --

Product: Li-ion Cell

Type Designation: 14500



Figure 1 Front view of cell

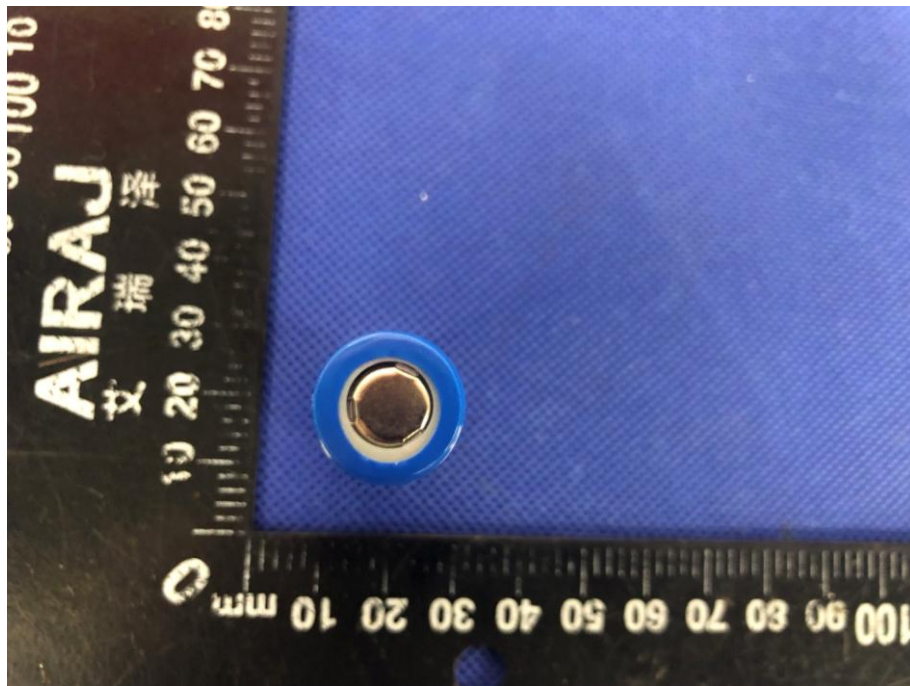


Figure 2 Top view of cell

Attachment 1

Equipment list

Product: Li-ion Cell

Type Designation: 14500

Testing location: Shenzhen LCS Compliance Testing Laboratory Ltd.

Room 101, 201, Building A and Room 301, Building C, Juji Industrial Park, Yabianxueziwei, Shajing Street, Bao'an District, Shenzhen, Guangdong, China

| Name | Manufacturer | Model No. |
|---------------------------------------|--------------|-------------------|
| Data Collector | Agilent | 34970A |
| Data Collector | Agilent | 34970A |
| Stopwatch | Gongwen | PC396 |
| Vibration Test Instrument | Dongling | ES-3-150 |
| Vertical Shock Tester | Dongling | SY10-5 |
| Battery Cursh Tester | Bell | BE-6045-2T |
| Battery Impact Tester | Bell | BE-5066 |
| Battery Internal Short Circuit Tester | Bell | BE-6045W |
| Low Altitude Simulation Tester | Bell | BE-ZK-64 |
| Battery Thermal Abuse Tester | Bell | BE-101-270B |
| Battery Short Circuit Tester | Bell | BE-1000A |
| Battery Burning Tester | Bell | BE-6046 |
| Rapid Temperature Tester | Bell | BTKS-150C |
| Free Fall Tester | Bell | BF-F-315S |
| Battery Charge/Discharge Tester | Xinwei | CT-3008-5V10A-204 |
| Battery Charge/Discharge Tester | Xinwei | CT-3008-5V10A-204 |
| Glove Box | Etelux | Lab2000 |
| Battery Charge/Discharge Tester | Xinwei | CT-3008-15V3A |
| Battery Charge/Discharge Tester | Xinwei | CT-3008-15V3A-A |
| Internal Resistance Tester | OPTEX | BTS-100 |
| Digital multimeter | TES | TES2732 |
| DC Power Supply | Chroma | 62012P-80-60 |
| Insulation Resistance Tester | Yangzi | CS2676CX-1 |
| Battery Charge/Discharge Tester | Xinwei | CT-4008-6V4A-CCDC |
| Battery Charge/Discharge Tester | Xinwei | CT-4008-50V20A-ND |
| Electronic Balance | Yingheng | 5003 |

Attachment 1

Equipment list

Page 2 of 2

Report No.: LCS210628105AS

Product: Li-ion Cell

Type Designation: 14500

| Name | Manufacturer | Model No. |
|---------------------------------|--------------|-------------------|
| Battery Charge/Discharge Tester | Xinwei | CT-3008-5V10A-204 |
| Battery Charge/Discharge Tester | Xinwei | CT-3008-5V10A-204 |
| Battery Charge/Discharge Tester | Xinwei | CT-3008-10V6A-A |
| Battery Charge/Discharge Tester | Xinwei | CT-3008-10V6A-A |
| Battery Acupuncture Tester | Xiangmin | XM-ZC001 |
| Battery Charge/Discharge Tester | Repower | CTS 20V-5A |
| Battery Charge/Discharge Tester | Repower | CDS60V10A |
| Battery Charge/Discharge Tester | Repower | CDS-5V100A |